

What is claimed is:

1. An adaptive transport protocol decoder, comprising:

5 a source of a stream of packets, each including a payload, and having a first transport protocol;

10 a source of a stream of packets, each including a payload, and having a second transport protocol;

15 a protocol decoder, coupled to the first and second packet stream sources, for extracting the respective payloads from the packets from a selected one of the first and second packet stream sources.

20 2. The adaptive transport protocol decoder of claim 1 further comprising a selector, having respective input terminals coupled to the first and second packet stream sources, and an output terminal coupled to the protocol decoder, and responsive to a select signal for coupling one of the first and second packet stream sources to the protocol decoder.

25 3. The adaptive transport protocol decoder of claim 1 wherein the protocol decoder comprises a processor, responsive to a first control program for processing the packets from the first packet stream source to extract the respective payloads, a second control program for processing the packets from the second packet stream source to extract the respective payloads, and a third control program for switching between the first control program and the second control program.

30 4. The adaptive transport protocol decoder of claim 3 wherein:

the processor includes a memory for storing the first, second and third programs; and

both of the first and second control programs comprise:

a packet handler, executed in response to each received packet;

a plurality of interrupt drivers, stored in the memory at respective locations, called by software interrupt;

an interrupt vector, stored at a fixed, predetermined location in memory, including a plurality of entries, each containing a pointer to a respective location of an interrupt driver.

5. The adaptive transport protocol decoder of claim 4 wherein the third control program switches between the first and second control programs by moving the interrupt vector of one of the first and second control programs to the fixed predetermined location in the memory, and simultaneously moving the interrupt vector of the other one of the first and second control programs to another location in the memory.

6. The adaptive transport protocol decoder of claim 4 wherein both the first and second control programs further comprise a buffer for storing the respective extracted payloads at a location in the memory.

7. The adaptive transport protocol decoder of claim 6 wherein the third control program switches between the first and second control programs by:

moving the interrupt vector of one of the first and second control programs to the fixed predetermined location in the memory, and simultaneously moving the interrupt vector of the other one of the first and second control programs to another location in the memory; and

reallocating the buffer to a location in the memory.

8. The adaptive transport protocol decoder of claim 4 wherein:

the packet handler is an interrupt handler stored in the memory at a
5 location; and

one of the entries in the interrupt vector points to the location of the
packet handler.

10 9. The adaptive transport protocol decoder of claim 8 wherein:

each of the first and second packet stream sources generates an interrupt
request signal when a packet is available;

15 the entry in the interrupt vector pointing to the location of the packet
handler is responsive to the interrupt signal from the selected packet stream
source.

20 10. The adaptive transport protocol decoder of claim 3 further
comprising:

a selector, having respective input terminals coupled to the first and
second packet stream sources, and an output terminal coupled to the protocol
decoder, and responsive to a select signal for coupling one of the first and
25 second packet stream sources to the protocol decoder; and wherein:

the third control program is responsive to the select signal to switch to the
first control program when the first packet stream source is coupled to the
protocol decoder and to switch to the second control program when the second
30 packet stream source is coupled to the protocol decoder.

SB
11. The adaptive transport protocol decoder of claim 1 further comprising a payload processor coupled to the protocol decoder for processing the respective payloads extracted from the received packets.

5

12. The adaptive transport protocol decoder of claim 1 wherein:

each packet in the first and second packet streams further comprises a header containing information related to the payload;

10

the protocol decoder comprises a register for storing information from a header of a received packet; and

the protocol decoder accesses the register to obtain the information.